

An extension of time to respond to the Restriction Requirement is respectfully requested. A Petition for an Extension of Time and the appropriate fee are being filed concurrently.

Prior to examination, please amend the application as follows:

In the Claims

Please cancel Claims 1-72, 75-77 and 79.

Please amend Claim 73. Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (page i).

- a' 73. (Amended) A method for identifying an agent which is an inhibitor of a Fatty Acid Transport Protein (FATP), comprising the steps of:
- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding the FATP;
  - (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of the FATP;
  - (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of the FATP, while leaving a second aliquot of the host cells uncontacted with the agent;
  - (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
  - (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;
- wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of the FATP.

Please add new Claims 82-123.

82. (New) A method for identifying an agent which is an inhibitor of FATP1, comprising the steps of:

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- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding FATP1;
  - (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of FATP1;
  - (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of FATP1, while leaving a second aliquot of the host cells uncontacted with the agent;
  - (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
  - (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of FATP1.

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~~83.~~ (New) The method of Claim ~~82~~ wherein the cell surface protein is CD2.

*3*  
~~84.~~ (New) The method of Claim ~~82~~ wherein the fatty acid substrate is BODIPY-labeled.

85. (New) A method for identifying an agent which is an inhibitor of FATP2, comprising the steps of:

- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding FATP2;
- (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of FATP2;

- (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of FATP2, while leaving a second aliquot of the host cells uncontacted with the agent;
  - (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
  - (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;
- wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of FATP2.

86. (New) The method of Claim 85 wherein the cell surface protein is CD2.

87. (New) The method of Claim 85 wherein the fatty acid substrate is BODIPY-labeled.

88. (New) A method for identifying an agent which is an inhibitor of FATP3, comprising the steps of:

- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding FATP3;
- (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of FATP3;
- (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of FATP3, while leaving a second aliquot of the host cells uncontacted with the agent;
- (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
- (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of FATP3.

89. (New) The method of Claim 88 wherein the cell surface protein is CD2.

90. (New) The method of Claim 88 wherein the fatty acid substrate is BODIPY-labeled.

91. (New) A method for identifying an agent which is an inhibitor of FATP5, comprising the steps of:

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- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding FATP5;
  - (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of FATP5;
  - (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of FATP5, while leaving a second aliquot of the host cells uncontacted with the agent;
  - (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
  - (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of FATP5.

92. (New) The method of Claim 91 wherein the cell surface protein is CD2.

93. (New) The method of Claim 91 wherein the fatty acid substrate is BODIPY-labeled.

94. (New) A method for identifying an agent which is an inhibitor of FATP6, comprising the steps of:

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cont.
- (a) introducing into cells one or more vectors comprising a gene encoding a cell surface protein and a nucleic acid encoding FATP6;
  - (b) contacting the host cells with anti-cell surface protein antibody and labeled fatty acid substrate of FATP6;
  - (c) contacting a first aliquot of the host cells with an agent being tested as an inhibitor of FATP6, while leaving a second aliquot of the host cells uncontacted with the agent;
  - (d) identifying, in the first and second aliquots, the host cells expressing the cell surface protein by detecting the anti-cell surface protein antibody bound to the host cells; and
  - (e) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells identified as expressing the cell surface protein;
- wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of FATP6.

95. (New) The method of Claim 94 wherein the cell surface protein is CD2.

96. (New) The method of Claim 94 wherein the fatty acid substrate is BODIPY-labeled.

97. <sup>4</sup> (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a FATP, said FATP comprising the amino acid sequence of SEQ ID NO: 25, comprising the steps of:

- a) maintaining test cells expressing said FATP in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said FATP.

98. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a FATP, said FATP comprising the amino acid sequence of SEQ ID NO: 102, comprising the steps of:

- a) maintaining test cells expressing said FATP in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said FATP.

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cont. 99. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a FATP, said FATP comprising the amino acid sequence of SEQ ID NO: 55, comprising the steps of:

- a) maintaining test cells expressing said FATP in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said FATP.

100. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and encoded by a polynucleotide which hybridizes to a complement of the polynucleotide of SEQ ID NO: 24 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

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- a) maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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101. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and encoded by a polynucleotide which hybridizes to a complement of the polynucleotide of SEQ ID NO: 46 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- a) maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

102. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and encoded by a polynucleotide which hybridizes to a complement of the polynucleotide of SEQ ID NO: 101 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:
- a) maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;

- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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cont.
103. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and encoded by a polynucleotide which hybridizes to a complement of the polynucleotide of SEQ ID NO: 54 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- a) maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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104. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 25, comprising the steps of:

- a) maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the fatty acid in the test cells; and
- c) comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;



wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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cont
105. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 102, comprising the steps of:
- maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
  - measuring uptake of the fatty acid in the test cells; and
  - comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

106. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 55, comprising the steps of:
- maintaining test cells expressing said polynucleotide in the presence of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
  - measuring uptake of the fatty acid in the test cells; and
  - comparing uptake of the fatty acid in the test cells with uptake of the fatty acid in suitable control cells;

wherein lower uptake of the fatty acid in the test cells compared to uptake of the fatty acid in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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107. (New) A method for identifying an agent which is an inhibitor of a protein comprising the amino acid sequence of SEQ ID NO: 25, comprising the steps of:
- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
  - (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
  - (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
  - (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

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cont.  
wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

108. (New) A method for identifying an agent which is an inhibitor of a protein comprising the amino acid sequence of SEQ ID NO: 102, comprising the steps of:
- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
  - (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
  - (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
  - (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

109. (New) A method for identifying an agent which is an inhibitor of a protein comprising the amino acid sequence of SEQ ID NO: 55, comprising the steps of:
- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
  - (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;

- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

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110. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and being encoded by a polynucleotide comprising a nucleotide sequence which hybridizes to a complement of the polynucleotide of SEQ ID NO: 24 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

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wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

111. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and being encoded by a polynucleotide comprising a nucleotide sequence which hybridizes to a complement of the polynucleotide of SEQ ID NO: 46 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;

- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

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cont.

112. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and being encoded by a polynucleotide comprising a nucleotide sequence which hybridizes to a complement of the polynucleotide of SEQ ID NO: 101 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

113. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and being encoded by a polynucleotide comprising a nucleotide sequence which hybridizes to a complement of the polynucleotide of SEQ ID NO: 54 under stringency conditions of 6X SSC at 65° C, followed by two or more washes in 0.2X SSC/0.5% SDS at 65° C, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;

- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

114. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 25, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

115. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 102, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;

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- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

116. (New) A method for identifying an agent which is an inhibitor of a protein, said protein having fatty acid transport activity and comprising an amino acid sequence having at least about 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO: 55, comprising the steps of:

- (a) introducing into host cells one or more vectors comprising a polynucleotide expressing said protein;
- (b) culturing a first aliquot of the host cells with fatty acid substrate of said protein and with an agent being tested as an inhibitor of said protein;
- (c) culturing a second aliquot of the host cells with fatty acid substrate of said protein;
- (d) measuring, in the first and second aliquots, uptake of the fatty acid substrate of the host cells;

wherein less uptake of the fatty acid substrate in the first aliquot compared to the second aliquot is indicative that the agent is an inhibitor of said protein.

117. (New) A method for identifying an agent which is an inhibitor of fatty acid uptake by a FATP, comprising the steps of:

- a) maintaining test cells expressing said FATP in the presence of a complex of a fatty acid and an agent to be tested as an inhibitor of fatty acid uptake;
- b) measuring uptake of the complex in the test cells; and
- c) comparing uptake of the complex in the test cells with uptake of the complex in suitable control cells;

wherein lower uptake of the complex in the test cells compared to uptake of the complex in the control cells is indicative that the agent is an inhibitor of fatty acid uptake by said protein.

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